Rock Island Arsenal
Shop F
(Building 64)
Rodman Avenue between Second Street
and Third Street
Rock Island
Rock Island County
Illinois

HAER No. IL-20-C

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, D.C. 20013-7127

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HISTORIC AMERICAN ENGINEERING RECORD

ROCK ISLAND ARSENAL
SHOP F
(Building 64)
HAER No. IL-20C

Location: Rodman Avenue between Second Street and Third Street,
Rock Island Arsenal,
Rock Island,
Rock Island County, Illinois
UTM: 15.704910.4599020
Quad: Davenport East

Date of Construction: 1874-1878

Present Owner and Occupant: U.S. Army

Present Use: Electroplating shop

Significance: After taking command of Rock Island Arsenal in 1865, General Thomas Jefferson Rodman devised a master plan for the installation calling for the construction of ten large, Greek Revival, manufacturing shops, five on each side of the island's major east-west thoroughfare. Under construction from 1874 to 1878, Shop F was the sixth to be completed. With its companion facilities completed under the Rodman plan, Shop F forms a cohesive architectural statement, which, in terms of both scale and style, has no counterpart among government installations in the Midwest.

In addition to their architectural importance, the Rodman shop buildings are the administrative and technological core of Rock Island Arsenal, one of only two "old-line," nineteenth-century arseanls still in operation for munitions production. The buildings are vital for understanding the history of American ordnance development and manufacture from the Spanish American War to the present. Shop F is part of the Rock Island Arsenal National Register Historic District.

Historian: Jeffrey A. Hess, February 1985

Architectural Historian: David Arbogast, February 1985

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: According to Colonel Daniel Webster Flagler, who succeeded General Thomas Jefferson Rodman as the arsenal's commandant in 1871, the building site was selected by Rodman in February 1866 (Flagler, p. 118). Excavation for Shop F began in 1874 (Flagler, p. 270). By June 1876, the walls had been completed so far as "to include the window cap course of the whole building" (Flagler, p. 349). The building was finished in 1878 (Nothstein and Stepehens, p. 156). A datestone above the central entrance of the north facade bears the inscription, "1874."

2. Architect: Initial plans for the building were prepared in the late 1860s by General Thomas Jefferson Rodman, who served as the arenal's commandant from August 1865 to June 1871. These plans were refined in the summer of 1871 by Colonel Daniel Webster Flagler, who succeeded Rodman's command and supervised the arsenal's construction program until 1886 (Flagler, pp. 116, 261, 286-287; Nothstein and Stephens, pp. 154, 176-177).

Born in Salem, Indiana in 1815, Rodman graduated from West Point in 1841 and was assigned to Allegheny Arsenal in Pittsburgh as an officer of the Ordnance Department. During the next two decades, he developed techniques for hollow casting cannon and for producing perforated propellant, which revolutionized the manufacture and use of artillery (Zabecki, pp. 55-56; Flagler, pp. 262-266).

As commandant of Watertown Arsenal near Boston from 1859 to 1865, Rodman was responsible for designing a machine shop for the installation, which was a simplified, brick version of the Greek Revival stone manufacturing shops he subsequently planned for Rock Island Arsenal (Baylies and Bahr, p. 37). Rodman assumed command of Rock Island Arsenal in 1865; he died of illness at the installation in June 1871 (Flagler, pp. 116, 261).

Like Rodman, Flagler was a career officer in the Ordnance Department. Born in Lockport, New York in 1835, he graduated from West Point in 1861, and was appointed a second lieutenant in the Ordnance Department. Breveted lieutenant colonel for distinguished battlefield service during the Civil War, Flagler served as commandant of Augusta Arsenal from 1866 to 1871, and of Rock Island Arsenal from 1871 to 1886. After fulfilling command

responsibilities at Frankfort Arsenal and Watertown Arsenal, he was appointed Chief of Ordnance in 1891. He served in that capacity until his death in 1899 (Nothstein and Stephens, p. 605).

3. Original and subsequent owners: U.S. Army.

4. Builder, contractor, suppliers: The iron roof frame and "house hardware" were probably manufactured at the arsenal in Shop E (see HAER No. IL-20H), which furnished these items for Shop F, also under construction in the mid-1870s (Flagler, p. 341, see HAER No. IL-20B).

   Woodwork, including sash and doors, was probably manufactured in Shop C ("History of Rock Island Arsenal," p. 32; see HAER No. IL-20A).

   Most of the construction work was "done by day workmen, employed and paid by the Government. The work was directed and superintended directly by officers of the Ordnance Department stationed at the arsenal, and the necessary engineering work, calculations, making of tests, experiments, etc., was also done by the officers" (Flagler, p. 260).

5. Original plans and construction: On February 7, 1866, Rodman submitted to the War Department a schematic site plan of the arsenal, proposing the construction of ten manufacturing shops, five on each side of the arsenal's main east-west thoroughfare (later named Rodman Avenue). The plan was published in 1877 (Flagler, Plate I). It delineates the ten buildings, including Shop F, as U-shaped structures with a crossbar connecting the legs of the "U" at midpoint. According to Flagler, the configuration of the buildings was almost immediately changed. "To add strength to the walls [and] beauty to the architecture," two porticos were added to the front and to each of the sides of the buildings. Also, the crossbar between the legs of the "U" was removed "to leave the courtyard clear for teaming purposes" (Flagler, p. 123). The revised plan was published in 1877 (Flagler, Figure 1, inset on Plate I). The Rock Island Arsenal Engineering Plans and Services Division has an original, undated "Plan of Shop F" that is identical to the 1877 plan (see HAER Photo No. IL-20C-13).

   In June 1871, Flagler traveled to Washington to discuss the design of Shops E (see HAER No. IL-20H) and F with his superiors in the Ordnance Department. As he later explained:

> Shop E is the forge shop and foundry for the arsenal; and the plans which had been adopted previously required that this shop, which was to be the center shop of the [south] row of shops, and shop F, which was to be the forge shop and rolling mill . . . and also the center shop of the [north] row of shops, were to have the same ground plan as the other shops and to be only one story high; but the elevations and thickness of walls had not been fixed. [In addition to working out these details], it was determined at the same time to put peak hoods [i.e., monitors] on these two shops, for ventilation and for conducting away smoke" (Flagler, p. 286).

From this account it appears that Shops E and F were originally intended to have the same architectural detailing. But after Shop E was completed in 1874, Flagler made two revisions in the design. First, he decided that the frieze windows, which had originally been designed for three-story shops, were unnecessary for Shop F:

> "As this is a one story building only, the frieze windows, which have been put in the other shops for lighting the third story, were not required. To obtain sufficient height for the frieze windows, the frieze (in the other shops) has been made much higher than the proportions required in architecture will allow. This has been injurious to or lessened the effect of the entablature by separating too widely the architrave and cornice, and the wide separation is made more apparent because the frieze is left undressed. Its height would make dressing the stone expensive. In shop F the frieze has been reduced to 24 inches and dressed (bush hammered). The effect is better, and the cost is less" (Flagler, p. 349).

Second, Flagler widened the entrance doors: "This change is deemed necessary as the wide doors will probably be required in case heavy guns should be manufactured or other heavy work should ever be done in this shop" (Flagler, p. 342). These changes are shown in an original "Front Elevation," dated March 23, 1877, on file at the Rock Island Arsenal Engineering Plans and Services Division (see HAER Photo No. IL-20C-20). The drawing was published in 1877 (Flagler, Plate VII). The basic details of the original construction are depicted in a bird's-eye view of the arsenal published in 1877 (Flagler, frontispiece). The building's present configuration conforms to the original construction.

6. Alterations and additions: In 1878-1879, a free-standing brick smokestack was constructed in the courtyard of Shop F. The stack was connected by an underground flue to boilers in the basement of Shop F. The Rock Island Arsenal Engineering Plans and Services Division has original plans and elevations for this work (see HAER Photo Nos. IL-20C-16 through IL-20C-17). A photograph in the picture collection of the Rock Island Arsenal Historical Office confirms that the smokestack was constructed as planned (see HAER Photo No. IL-20C-10).

   In 1900-1901, the smokestack received a one-story brick addition on its north facade. The Rock Island Arsenal Engineering Plans and Services Division has a floor plan and elevation, dated 1900, for the addition. It is labeled, "Boiler House / Shop F / Side Elevation / South End Elevation / Plan," February 14, 1900, D40168. The plan shows that the boiler house was designed with two sections divided by a firewall. The north section was used for "lockers, closets, etc." for Shop F. The south section contained " 6 [oil-fired] boilers of about 55 horsepower each [see HAER Photo No. IL-20C-19], with necessary additional appliances for a central steam-heating plant for all of the five shops of the armory row" ("Annual Report, 1901," p. 47). A 1944 photograph in the the picture collection of the Rock Island Arsenal Historical Office confirms that the addition was constructed as planned. The photograph is captioned, "47 / Looking South at Boiler House 'F,' Bldg. No. 65 / 11 November 1944."

B. Historical Context:

After assuming command of Rock Island Arsenal in August 1865, General Thomas Jefferson Rodman devised a master construction plan for the installation, which he submitted to the War Department on February 7, 1866. In its general outline, Rodman's plan called for the construction of ten large, stone, manufacturing shops, five on each side of the arsenal's main east-west thoroughfare (later named Rodman Avenue). The establishments on the south side of the avenue were called "arsenal shops," which meant they were to be devoted to the manufacture of general ordnance items. Those on the north side were called "armory shops," because they were intended for small arms production. All ten shops were designed in a Greek Revival style, which Rodman had previously used in designing a machine shop at Watertown Arsenal near Boston. Although none of the shops was completed before Rodman died of illness in June 1871, all ten were eventually finished by his nineteenth-century successors (Flagler, p. 118; Nothstein and Stephens, pp. 153-157).

Situated in the center of "armory row," Shop F was the sixth shop completed. Excavation began in 1874, and construction concluded in 1878. During the nineteenth century, the shop "was used principally for manufacture of bar iron for roof trusses and other purposes in the [arsenal's] construction work" ("History of Rock Island Arsenal," p. 13). The original equipment was powered by the arsenal's telodynamic waterpower system (see HAER No. IL-20CC), supplemented by a 200 horsepower steam engine manufactured by the Putnam Machine Company of Fitchburg, Massachusetts. The machinery is described as follows in the arsenal's annual report for 1879:

> "The train of rolls is a 14-inch, two high train adapted to the manufacture of ordinary forms of bar-iron required for ordnance purposes from the wrought scrap that may accumulate at the arsenal from time to time. . . . The 5,000 pounds steam-hammer [see HAER Photo No. IL-20C-11] . . . is adapted for 'shingling,' and making hammered blooms, in connection with the mill, for the manufacture of any heavy forgings that the probably future wants of the government may ever require at this place, and especially to the manufacture from scrap of the large quantities of heavy and expensive shafting required for the shops and transmission of power . . . . The shear is a second-hand alligator shear, procured at about the price of old scrap, and is specially adapted for cutting gun-carriage axles and any heavy job work that future operations of the arsenal may require. The saw . . . is for cutting large bar hot. It was made at the arsenal" ("Report, 1879," p. 205).

Although Shop F, along with the other shops on "armory row", was originally intended for small arms production, it was not until 1899 that Congress appropriated funds for installing the necessary manufacturing equipment (Nothstein, p. 209). In 1900, all of the original equipment in Shop F, including the steam engine and boilers, was dismantled to make way for a new armory forge shop ("History of Rock Island Arsenal," p. 13). The new electric-powered machinery included "two rows of Billings & Spencer board drops [see HAER Photo No. IL-20C-12], several helve hammers, trimming presses [and oil-fired furnaces] for the annealing and case-hardening department" (Stanley, p. 241). Shop F was used for forging and heat-treating rifle components from 1904 to 1913, and again during World War I (Nothstein and Stephens, pp. 215-218, 232).

After World War I, the arsenal's forging operations were consolidated in the newly completed Field and Siege Building (see HAER No. IL-20AA). Shop F apparently was an inactive facility until about 1940, when it was reactivated for the duration of World War II as a heat-treating plant for steel stock used in the manufacture of

artillery recoil mechanisms ("History Artillery Vehicle Department, n.p.). Closed down immediately after World War II, the building was re-equipped and reopened in 1948 as an electro-plating plant; it continues in that capacity to the present day ("History Manufacturing Division," p. 33; Nothstein and Stephens, pp. 531-533). Shop F has been designated as "Building 64," and the boiler house addition as "Building 65," at least since World War II ("Industrial Facilities Inventory"; for additional documentation, see HAER No. IL-20).

Prepared by: Jeffrey A. Hess
MacDonald and Mack Partnership
February 1985

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural character: The building is a massive, late Greek Revival style, U-plan, limestone building. It is one-and-one-half stories in height with a gabled roof. It forms the center of a set of symmetrical buildings along the north side of Rodman Avenue, which is mirrored by an identical set on the south side.

2. Condition of fabric: The building is well-maintained and is in good condition, despite intensive industrial use.

B. Description of Exterior:

1. Overall dimensions: The main (south) block of the building (HAER Photo Nos. IL-20C-1 and IL-20C-2) measures 210' x 60' (19 bays on the south elevation and 9 bays on the north elevation). Two wings (HAER Photo Nos. IL-20C-2 and IL-20C-3), each measuring 240' (28 bays on their exterior elevations and 21 bays on their courtyard elevations) x 60' (5 bays on their north elevations) stretch north from the east and west ends of the main block. Near each end of the outer, long elevations of the wings are projecting pavilions measuring 60' (5 bays) and extending 15' (1 bay) from the wing elevations. The building is one-and-one-half stories tall with no basement or attic.

2. Foundations: Coursed, rock-faced ashlar limestone measuring 3'-0" thick below a dressed ashlar limestone water table.

3. Walls: Coursed, rock-faced ashlar limestone (HAER Photo Nos. IL-20C-1, IL-20C-2, IL-20C-3, IL-20C-4 and IL-20C-5). Colossal rock-faced ashlar limestone pilasters (HAER Photo Nos. IL-20C-1, IL-20C-2, IL-20C-3, IL-20B-4, and IL-20C-5) rising from the water

table to the entablsture divide the elevations into a regular bay system. The dressed limestone entablature (HAER Photo Nos. IL-20C-1, IL-20C-2, IL-20C-3, and IL-20C-5) carries a projecting dressed limestone cornice. The pedimented gable ends (HAER Photo Nos. IL-20C-1, IL-20C-2, and IL-20C-3) are rock-faced ashlar limestone with dressed limestone cornices. There is a carved limestone block above the central entrsnce of the front (south) facade bearing the date 1874.

4. Structural systems: Limestone bearing wall. The floor is a poured concrete slab on grsde. The roof system is iron Fink trusses (HAER Photo Nos. IL-20C-6, IL-20C-8, and IL-20C-9).

5. Chimneys: There are a large number of chimneys (HAER Photo Nos. IL-20C-1, IL-20C-2, IL-20C-3, and IL-20C-5) located randomly throughout the building. None of these appear to dste from the original construction. Although most protrude through the roof, a number exit through windows and upward along the wslls. Virtually all of the chimneys are round sheet metsl flue pipes.

6. Openings:

   a. Doorways: Principal doorways (HAER Photo Nos. IL-20C-1, IL-20C-2, IL-20C-3, snd IL-20C-4) are centered in the pavilions, the wing ends, the third bays from each end of the aouth elevation, and the eighth bay from the south end of the courtyard elevations of the wings. Each has a rock-faced limestone segmental-arched head with a rock-faced keystone, and rock-faced limestone jambs with large semi-circular base blocks projecting into the doorway. Most of the original limestone sill blocks have been replaced with poured concrete sills. All four of the south and north doorways contain modern overhead doors (HAER Photo No. IL-20C-4), as does the doorway in the southeast pavilion. The northeast and northwest pavilion doorways and those in the courtyard have been filled with steel window sash. The southwest pavilion doorway retains a pair of originsl wood doors with four-lights above a single psnel with transoms and sidelights. Narrower doorwsys (HAER Photo No. IL-20C-1) are located in the center of the south and north elevations of the main block and in the first and fifteenth bsys from the south of the courtyard elevations of the wings. These openings are identical to those of the principal doorways, differing only in width. The center doorway of the south elevation retains a pair of original wood doors with six lights over a single panel with a transom. In the center of the north elevation is a similar original wood door with eight lights over s single panel and operating on a sliding track. The two narrow, south courtyard doorways have been filled with steel window sash. The two narrow, north courtyard doorways

retain pairs of original wood doors similar to those remaining in the southwest pavilion doorway. West of the east doorway of the south elevation and south of the southeast pavilion doorway single window openings have been lengthened to accomodate modern doorways each containing a slab door with an upper glass panel.

b. Windows: Typical first-floor window openings (HAER Photo Nos. IL-20C-1, IL-20C-2, IL-20C-3, and IL-20C-4) contain six-over-six-over-six, triple-hung wood sash, and have rock-faced limestone jambs, cut limestone sills and flat lintels. The gable ends contain paired window openings (HAER Photo Nos. IL-20C-1, IL-20C-2, and IL-20C-3) containing six-over-six, double-hung, wood sash, and have rock-faced limestone jambs, segmental-arched, rock-faced limestone arches and keystones and dressed limestone sills. The monitor (HAER Photo Nos. IL-20C-1, IL-20C-2, IL-20C-3, and IL-20C-5) has modern corrugated fiberglass panels in its window openings. All wood sash are painted white.

7. Roof:

a. Shape, covering: The roof (HAER Photo Nos. IL-20C-1, IL-20C-2, IL-20C-3, and IL-20C-5) is a cross-gable form with a cross-gable monitor. Both the roof and its monitorare covered with corrugated sheet metal roofing.

b. Cornice, eaves: The cornice and eaves (HAER Photo Nos. IL-20C-1, IL-20C-2, IL-20C-3, and IL-20C-5) are cut limestone. The interior metal gutter system is tied to exterior metal leaders which lead to an underground drainage system.

9. Ancillary structures: Attached to the west end of the north elevation of the main block is an electrical transformer vault. It is a shed-roofed, one-room structure with unpainted concrete block walls. Slab doors are located in masonry openings on the east and north elevations. Each of the three exposed elevations has a window opening containing a six-light, fixed, steel sash with concrete block jambs, sill, and lintel. Two window openings have been filled with brick.

C. Description of Interior:

1. Floor plans: The building contains no major interior partitions, aside from small, enclosed offices in some of the pavilions. Two freestanding steel mezzanines (HAER Photo Nos. IL-20C-6 and IL-20C-7) and steel walkways have been erected in the wings with accompanying steel stairs. The pavilions contain restroom facilities.

2. Stairs: Modern straight-run steel stairs and ladders serve the mezzanine and walkway levels.

3. Flooring: All flooring is poured concrete (HAER Photo No. IL-20C-6) with a sealer applied to it, except for modern steel grating (HAER Photo No. IL-20C-7) at the mezzanine and walkway levels and over subfloor tunnels and raceways. Office floors are concrete covered with green linoleum tile.

4. Wall and ceiling finishes: Outer walls (HAER Photo Nos. IL-20C-6 and IL-20C-8) are painted rock-faced ashlar limestone. Interior office partition walls are painted gypsum board. The ceiling (HAER Photo Nos. IL-20C-6, IL-20C-8, and IL-20C-9) is open with the underside of the corrugated sheet metal roofing exposed.

5. Openings:

   a. Doorways and doors: All doorways are of relatively recent vintage appropriate to their respective partitions.

   b. Windows: There are no window casings. Window openings are formed by the adjacent limestone or monitor roof framing (HAER Photo Nos. IL-20C-8 and IL-20C-9).

6. Hardware: Although most of the hardware in the building is of relatively modern vintage, original hardware does survive in conjunction with the original exterior doors noted above. This hardware consists of massive, ornate, cast-brass plate hinges and massive, ornate, cast-brass door pulls and plates with "RIA" cast into the decoration.

7. Mechanical equipment:

   a. Heating, air conditioning, ventilation: The building is abundantly heated by the excess heat produced by the industrial processes, so that tbere is no need for additional heating. There is no air conditioning. Forced ventilation of the excess heat and noxious gases is through numerous chimneys and flues.

   b. Lighting: Artificial illumination is by means of fluorescent and incandescent (HAER Photo Nos. IL-20C-6, IL-20C-7, and IL-20C-9) electrical fixtures. No evidence remains of original artificial lighting systems.

   c. Plumbing: No original plumbing fixtures survive.

   d. Machinery: No original machinery survives. For security reasons, information regarding existing machinery was unavailable.

D. Site:

1. General setting and orientation: The building is centered between between Second and Third Streets north of Rodman Avenue, the arsenal's principal street. East of the building is Building 66, a small arms assembly building, and west of the building is Building 62, an administration building. The interior courtyard is paved and contains Building 65, the Boiler House. North of the building runs North Avenue. The relatively level site slopes gently to the north.

2. Outbuildings: The courtyard contains a large number of outbuildings and several miscellaneous structures. At the south end of the courtyard is a freestanding chimney stack (HAER Photo Nos. IL-20C-1, IL-20C-2, IL-20C-3, and IL-20C-5). Immediately to its north is Building 65, a boiler house (HAER Photo No. IL-20C-5) to which is sttached a similar building on its north face. North of this is an unnumbered, freestanding drying room (HAER Photo Nos. IL-20C3 and IL-20C-5). In addition, there are some steel structures (HAER Photo Nos. IL-20C-3 and IL-20C-5) in the courtyard, of varying sizes which, although not buildings, relate to the industrial processes of the building.

   The chimney (HAER Photo Nos. IL-20C-1, IL-20C-2, IL-20C-3, and IL-20C-5), at the north end of the complex, is built with a rock-faced limestone ashlar base and a tan brick chimney stack. The base has dressed limestone flat pilasters with caps at each corner, a dressed limestone water table and a full entablature. The south wall has a simple segmental arch opening with three radiating voussoirs and rock-faced jambs. A thick steel door with a steel frame and simple hardware fills the opening. On each elevation, in the water table are single small openings with straight sides and triangular tops. The brick stack tapers gradually as it ascends. Each of its four faces has a single panel. An elaborate brick cap at the top incorporates motifs of semi-circular arches and Greek crosses.

   The boiler house (HAER Photo No. IL-20C-5) to the north is a rectangular, gable-roofed structure with a ridge running north-south. It appears to bave been built early in the twentieth century. Rising above the gable ends, the tan brick walls are capped with clay tile copings at the north and south gable ends and carry corbelled brick cornices with projecting eaves on the east and west elevations. The corrugated steel roof is fully exposed on the interior and is borne by steel beams. Doorways are randomly located on the south, east, and west elevations and include an overhead door, a slab door, a large pair of slab doors, and a wood door with three lights over three panels. Six window openings retain original, six-over-six, double-hung, wood sash and have brick

jambs, segmental brick arches, and flat limestone sill blocks. One window opening has been filled with cream brick. The floor is a concrete slab covered with linoleum tile on its west side and exposed on its east side. The interior is a single room with painted brick walls. On its esst side is a large settling tank with a steel walkway around it reached by a spiral steel staircase with a pipe rsiling near the center of the north end of the room. A steel ladder rises up the center of the south wall. The room is lit by fluorescent lights and is heated by steam radiators. It has one modern laboratory sink.

The adjacent building (HAER Photo No. IL-20C-5) to the north is similar to its neighbor, continuing the east snd west wall lines. Its asphalt-shingled gable roof, however, is lower, leaving the upper portion of the north gsble end of the south building exposed. The roof has s monitor along its ridge with louvered wood sides. Random doorways contain a pair of vertical board doors with strap hinges, a wood door with six lights over three panels, two slab doors, an overhead door, and a two-panel wood door. Five window openings, similar to their southern counterparts, retain originsl wood sash, but two have been filled with metal louvered vents. The interior is divided into two rooms by s full brick partition wall midway along the east and west walls. Finishes for both rooms are exposed concrete flooring, painted brick walls, and open wood decking and sswn rafters of the roof structure. There is a steel mezzanine in the north end of the north room, reached by a steel U-plan stsir with pipe railings which extend around the open sides of the mezzanine. There is a steel balcony at the north end of the south room, reached by a straight-run, steel stair having pipe rsilings which also extend around the balcony sides. Fluorescent fixtures supply illumination and steam radiators supply heat.

The drying room (HAER Photo Nos. IL-20C-3 snd IL-20C-5) at the north end of the courtyard is s modern, prefabricated-steel, one-room building with a low gable roof. The roof and outside walls are covered with modern steel siding painted white. There is s steel slab door in the south elevation and a pair of steel slab doors in the north elevstion and no windows. The interior has an exposed concrete floor snd exposed steel framing with thermal insulation between on the walls and ceiling. There are two fluorescent light fixtures at the ceiling.

Prepared by: Dsvid Arbogast
Architecturs1 Conservator
February 1985

PART III. SOURCES OF INFORMATION

A. Original Architectural Drawings:

The Rock Island Engineering Plans and Services Division has the following original drawings:

"Plan of Shop F," N.d., D40077Q (see HAER Photo No. IL-20C-13). Shows original configuration of building; identical to general plan for the arsenal's shops published in 1877 (Flagler, Figure 1, inset in Plate I).

"Shop F / Front Elevation," March 23, 1877, D40077, RIA B64-B1 (see HAER Photo No. IL-20C-20). Shows details of original construction; identical to elevation published in 1877 (Flagler, Plate VII).

"Roof for Shop F / Plan of Rafters & Purlines," N.D., D40077A, RIA B64-A1 (see HAER Photo No. IL-20C-14). Shows details of original construction.

"Plan of Purlines for Hood of Shop F," March 6, 1876, D40077B, RIA B64-A2 (see HAER Photo No. IL-20C-15). Shows details of original construction.

"Plan of Boiler Foundations / Shop F," N.d. D40168A, RIA B65-A4 (see HAER Photo No. IL-20C-18). Shows construction details for original boilers in basement of Shop F.

"Chimney for Shop F," March 5, 1878, D40168D, RIA B65-1A (see HAER Photo No. IL-20C-17). Shows details of 1878-1879 smokestack addition.

"Top of Chimney for Shop F," 1878, D40168E, RIA B65-A2 (see HAER Photo No. IL-20C-16). Shows details of 1878-1879 smokestack addition.

"Boiler House / Shop F / Side Elevation / South End Elevation / Plan," February 14, 1900, D40168, photostatic copy in untitled, bound volume containing photostats of drawings of arsenal's buildings. Shows construction details for 1900-1901 boiler house addition.

"Boiler Front for Shop F," December 26, 1900, D40168C, RIA B65-B2 (see HAER Photo No. IL-20C-19). Shows front elevation of six oil-fired boilers installed in boiler house addition of 1900-1901.

B. Early Views:

A bird's-eye view of the arsenal documenting the basic details of Shop F's original construction was published in 1877 (Flagler;

frontispiece). Additional views, listed below, are in the picture collection of the Rock Island Arsenal Historical Office:

Photograph of the north facades of the west wing and smokestack," captioned on the front, "North End Shop 'F' (see HAER Photo No. IL-20C-10). Originally published in 1898 (Tillinghast), the photograph documents that the smokestack addition was constructed as planned.

Photograph of the original steam hammer in Shop F, which was dismantled in 1900 (see HAER Photo No. IL-20C-11); originally published in 1898 (Tillinghast).

Photograph of Billings & Spencer drop hammers used in foring parts for 1903 model Springfield Rifle (see HAER Photo No. IL-20C-12); originally published in 1905 (Stanley, 241).

Photograph of south and west facades of boiler house addition constructed in 1900-1901, captioned, "47 / Looking South at Boiler House 'F,' Bldg. No. 65 / 11 November 1944." Shows that addition was constructed as planned.

C. Bibliography:

1. Primary and unpublished sources:

Baylies, Libby and Bahr, Betsy. "Historic American Buildings Survey of the United States Materials and Mechanics Research Center, Watertown, Massachusetts." 1982. HAER No. MA-20, HABS/HAER Collection, Prints and Photographs Division, Library of Congress. Discusses Rodman's architectural work at Watertown Arsenal.

Hess, Jeffrey A., and Mack, Robert C. "Historic Properties Report Rock Island Arsenal, Rock Island, Illinois". Prepared by MacDonald and Mack Partnership, and Building Technology Incorporated for the Historic American Buildings Survey/Historic American Engineering Record, National Park Service, U.S. Department of the Interior, 1985. The report, with accompanying inventory cards, is filed as field records in the Prints and Photographs Division, Library of Congress, under HAER No. IL-20.

"History of Rock Island Arsenal Called for by O.O. 23501-D-195." N.d. Rock Island Arsenal Historical Office. Good description of the building's manufacturing program during the nineteenth century.

"History Artillery Vehicle Department, 1939-1942," vol. 2. Rock Island Arsenal Historical Office. Notes building's use as a heat treating plant during World War II.

"History Manufacturing Department, 1947-1948," vol. 9. Rock Island Arsenal Historical Office. Notes building's conversion to an electroplating facility in 1948-1949.

"Industrial Facilities Inventory." Prepared by U.S. Army Corps of Engineers, Rock Island District, 1946. Rock Island Arsenal Engineering Plans and Services Division. Lists Shop F as "Building 64" and boiler house addition as "Building 65."

Real Property Cards, Engineering Plans and Services Division, Rock Island Arsenal. Briefly describes building's structural characteristics and provides sketchy history of maintenance operations.

2. Secondary and published sources:

Flagler, D[aniel] W[ebster]. A History of the Rock Island Arsenal from Its Establishment in 1863 to December 1876. Washington, D.C.: Government Printing Office, 1877. The most detailed account of the building's construction, written by the arsenal's commandant from 1871 to 1886.

Nothstein, Ira O. and Stephens, Clifford W. A History of Rock Island Arsenal from Earliest Times to 1954. Rock Island: U.S. Army, Rock Island Arsenal, 1965. 3 vols. Rock Island Arsenal. The best account of the arsenal's general operation and construction, with specific references to Shop F's manufacturing program during the nineteenth and twentieth centuries.

"Report of the Chief of Ordnance, 1879." House Documents, vol. 1907. Washington, D.C.: Government Printing Office, 1879. Describes original machinery, and notes completion of smokestack addition.

"Report of the Chief of Ordnance, 1901." House Documents, vol. 4285. Washington, D.C.: Government Printing Office, 1902. Notes completion of boiler house addition and nature of equipment.

Stanley, F. A. "The United States Arsenal at Rock Island --IV." American Machinist, 239-242. Describes building's operation as a forge plant for the small arms production program.

Tillinghast, B. F. Rock Island Arsenal: In Peace and in War. Chicago: The Shepard Company, 1898. Rock Island Arsenal Historical Office. Reproduces photographs of the original steam hammer (see HAER Photo No. IL-20C-11) and the Chimney addition (see HAER Photo No. IL-20C-10).

Zabecki, David T. "Father of the Rock Island Arsenal." Field Artillery Journal, 49 (January / February, 1951), 55-56. Discusses Rodman's pioneering work in cannon and propellant design.

E. Likely Sources Not Yet Investigated:

Record Group 156 at the National Archives contains correspondence on the construction and operation of Rock Island Arsenal from 1871 to 1903. This material is also available on 216 reels of microfilm at the Browning Museum, Rock Island Arsenal.

PART IV. PROJECT INFORMATION

This project was part of a program initiated through a memorandum of agreement between the National Park Service and the U.S. Department of the Army. Stanley J. Fried, Chief, Real Estate Branch of Heaquarters DARCOM, and Dr. Robert J. Kapsch, Chief of the Historic American Buildings Survey/Historic American Engineering Record, were program directors. Sally Kress Tompkins of HABS/HAER was program manager, and Robie S. Lange of HABS/HAER was project manager. Building Technology Incorporated, Silver Spring, Maryland, under the direction of William A. Brenner, acted as primary contractor, and MacDonald and Mack Partnership, Minneapolis, was a major subcontractor. The project included a survey of historic properties at Rock Island Arsenal, as well as preparation of an historic properties report and HABS/HAER documentation for 38 buildings. The survey, report, and documentation were completed by Jeffrey A. Hess, historian, Minneapolis; Barbara E. Hightower, historian, Minneapolis; David Arbogast, architectural historian, Iowa City, Iowa; and Robert C. Mack, architect, Minneapolis. The photographs were taken by Robert A. Ryan, J Ceronie, and Bruce A. Harms of Dennett, Muessig, Ryan, and Associates, Ltd., Iowa City, Iowa. Drawings were produced by John Palmer Low, Minneapolis.

Addendum to:

HAER No. IL-20-C

Rock Island Arsenal, Building No. 64
(Rock Island Arsenal, Shop F)
Rodman Avenue between 2nd and 3rd Streets
Rock Island Rock Island County, Illinois

PHOTOGRAPHS

Historic American Engineering Record
National Park Service
Department of the Interior
Denver, Colorado 80225-0287